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ABSTRACT

The systematic approach used by the state of Washington to humanize education by meeting the computing needs of its community college system is described. A brief sketch of the background of the state's community college system is provided, along with some indications of significant trends at the community college level. The general systems approach of establishing objectives, creating programs to achieve these objectives, and evaluating their success or failure is described, followed by a discussion of how these procedures were used to implement computing systems and services. Finally, the major benefits of the approach are considered. (PB)

THE WASHINGTON COMMUNITY COLLEGE SYSTEM'S APPROACH TO HUMANIZING EDUCATION

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INTRODUCTION

This presentation is a commentary on the systematic approach begun two years ago in the Washington community college system to provide a more responsive environment to the individual learning needs of its students. As a result of this effort, the state system has produced several statewide computer oriented products that should help humanize the educational process. These include management tools, a vocational career selection-evaluation-placement model, instructional tools, and a wide variety of supportive programs. Two examples of these computerized products are discussed in detail in the final two-thirds of this paper.

The focus of this segment of the presentation is on the planning, evaluation, and control process used by a large, complex educational institution in order to obtain maximum benefits from the special project efforts to humanize education through the use of computers. Working as individuals almost every professional in education has done something, with computers or otherwise, to humanize education within his area of concern. Often those individual efforts have immediate value in that local environment. However, if the effort expended is a part of a planned, coordinated program where the project developed has many potential beneficiaries waiting for its successful development, the individual efforts in addition have far reaching positive systemwide effects.

It is the potential for achieving wide benefits from individual efforts that makes the concept of a system approach to the identification, development, and proliferation of good ideas so intriguing to educational administrators. As our state system can clearly document, achieving that potential is a process of hard work, management, and luck.

This process would work for any type of educational institution, but provides increasing benefits as the complexity of the institution increases. I feel there are several reasons for sharing this process with you.

1. The process increases the net productivity of the computing effort by providing a clear sense of direction and distribution of developmental assignments.

2. The process serves to legitimatize specific decisions that have an impact on many people by involving them first in the decision-making process.

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3. The process creates and maintains a sense of consistency among various college computing program efforts by providing state-wide parameters and priorities.

That is the essence of my presentation. I would like now to set the context within which this effort is happening.

BACKGROUND

In 1967 the Washington Legislature decreed that all the community colleges in the state, previously creatures of a local school district, were henceforth state agencies (illustration 1). Each was provided with a local board of trustees--22 boards in all--and at the state level another lay board was appointed to coordinate the planning and funding of all the community colleges. This State Board has responsibility for requesting funds, for allocating funds to the colleges, and for assuring appropriate program development without unnecessary duplication. Each local board of trustees has responsibility for developing and providing its programs and for building capital facilities.

As you can see, there is built into this semi-division of authority some areas for real competition between the local institution and the State Board and its staff. The process I am about to describe is one means of accomplishing a wide range of necessary and worthwile computing and information systems improvement projects in an organizational environment that is not unusual in education.

THE COMMUNITY COLLEGE SYSTEM

The community college system is new, large, growing, diverse, complex and in a constant state of change. Ours is a demand environment where our students and potential students are no longer just coming to us because going to college is the thing to do. We now serve about 20 FTE students per each 1,000 of the Washington State population; the total state higher education level of service is fourth or fifth highest in the country. Therefore, we feel our future growth must come largely from meeting new or now unmet needs with innovative solutions. Over 31% of our students are in the age 30 and over category. Vocational training and retraining, for these people and for younger students, is being increasingly demanded. We are proud of our 30% proportion of vocational effort, but we look toward achieving 50%. Continuing education and training for leisure activities are similar demands now being made upon us.

A SYSTEM'S APPROACH

Our changing environment is moving our colleges inevitably down a road toward coordinated program planning: <u>coordinated</u> because there are too many institutions and demands to let each do its own thing independently; <u>planning</u> because these needs cannot be met effectively or efficiently without an overall plan; and <u>program</u> because we are talking about programs, about the means by which our colleges accomplish their respective missions.

So much for the background. Now, I would like to describe Washington State's approach to meeting these needs: first in general, and then as they pertain to the use of computers. In general, we have started what we call a

THE WASHINTON COMMUNITY COLLEGE SYSTEM

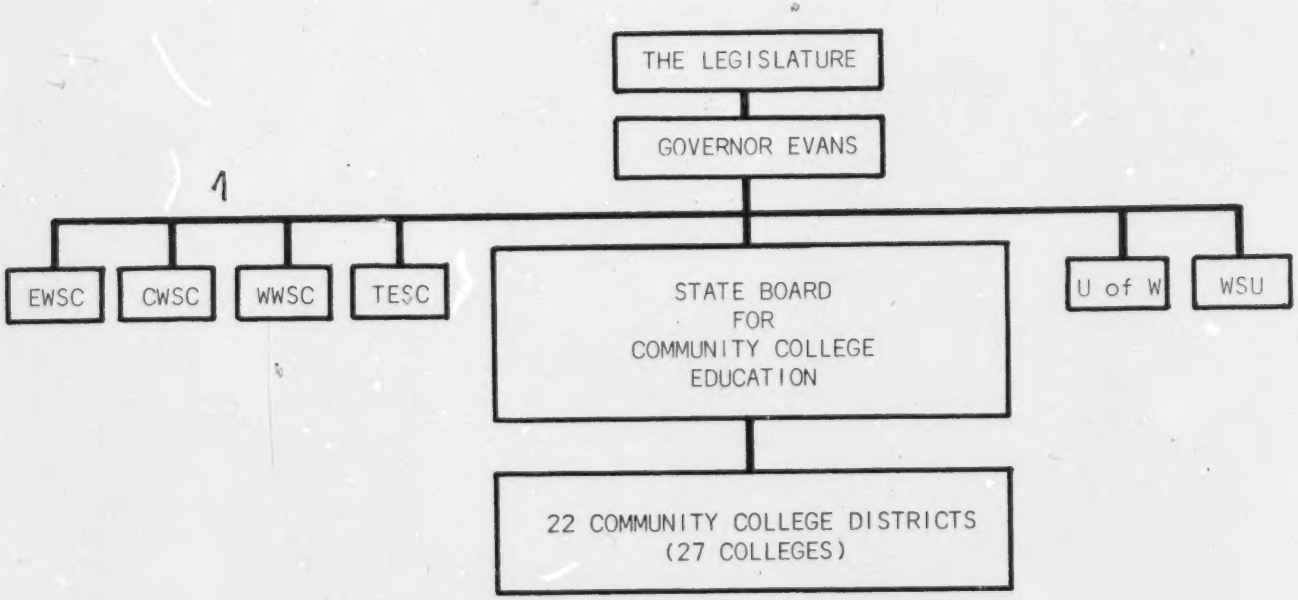

Illustration 1

Six-Year Planning Process. Six years is the period during which the colleges as parts of the state system can establish objectives, mount efforts to reach those objectives, and evaluate the results of those efforts to ascertain progress and to determine the new objectives for the next cycle of effort. To date, we have set eight system goals and have described the objectives by which to measure our progress. Half of those objectives, forty-four in number, are quantifiable and the other forty-four are not quantifiable.

In Phase 1 the colleges set specific, numerical targets for themselves for the appropriate quantificable objectives. Phase 2 is the development of work plans to achieve the objectives. Responsibility for achieving an objective, once the quantity of change is agreed upon, will be passed downward in the nature of a contract from the State Board to the district president and on to the appropriate staff member at the institutional division or department level. The staff member will develop a work plan. Each level of organization will be interested in a summary of the work plans of the level just below it. We expect that a good many personal, individual staff member work plans will be the final result of this delegation of responsibility for achieving a target.

The six-year planning process created an activity umbrella for all subordinate facets of planning including that related to computing. Efforts related to the use of the computer were specifically dealt with in a parallel subordinate activity that resulted in a State-wide Plan for Community College Computer Development. The hierarchial planning activities related to a computer activity involve a statewide six year plan, a statewide computer development plan, a district computer development plan, project proposals and selection, project development, project evaluation, and project proliferation.

"... THROUGH THE USE OF COMPUTERS"

The foregoing may be an overlong preamble to the discussion of planning, evaluating, and controlling computer improvement projects, but I feel it is necessary to identify both the unique aspects of our state educational system and the overall planning concepts under which computer project activity is undertaken.

A standard systems approach was used in this humanizing activity. A state computer development plan was written. Then individual districts developed computer plans consistent with the state plan. Individual faculty and staff identify and propose computer oriented projects that are consistent with the district's plans. Successful proposals are generally funded on a system basis for pilot development. When a project has run successfully on one campus and has been evaluated as appropriate for multiple campus use, a plan is prepared for proliferation to other interested campuses. This procedure also parallels the flow of authority and funding from the top down. This process has been relatively successful to date.

The state-wide computer development plan was a major planning activity and provided much of the initial value of the systematic approach. In the planning process the key ingredient was the Statewide Data Processing Steering

Committee, composed of a representation from each of the six regions in the state system. For a period of two years this committee worked to develop a comprehensive computer plan for the 27 colleges in the state community college system. During this time the focus was outward bound: attempting to obtain necessary authorization from the governor's data processing coordinator to improve our equipment inventory and to obtain necessary increases in funds for computing related activities. The effort was successful to the extent that of the 13 computer installations in the community college system, six major hardware replacements took place within one year. That coordinated planning effort succeeded after four years of unsuccessful individual campus attempts.

After the major equipment change effort, the focus of interest moved from an outward/upward pressure for the necessary resources to an inward orientation to establish clear needs, goals, objectives, and specific actions to accomplish the objectives. The committee prepared a plan that included four major goals to improve the following: 1) EDP vocational career programs, 2) the use of the computer to support instructors, 3) management information, and 4) the support of campus data processing requirements (illustration 2).

In setting goals and measureable objectives, considerable attention was given to identifying and dealing with the real constraints involved in making major changes. The budget expenditures for computing and supporting costs, excluding instructors or classrooms, has been less than $20 per full time equivalent student. Another factor was the biennial nature of legislative support. Planning needed to be on a long range basis to accommodate the two year cycles of the legislature. The number and quality of the computer support staff and faculty also became a real constraint. When averaged over the state system, there are fewer than four data processing staff and two data processing instructors per campus. The distribution of data processing professionals was in clusters around several colleges that had management support of computing. The problem of personnel upgrading became the paramount action item of the planning process. The limitations on the rate of technological updating and the geographical dispersion of the data processing became one of the principal concerns and constraints of the improvement process.

The Data Processing Steering Committee established 53 measureable objectives that would provide indicators of progress toward the four overall goals. In its planning process each district established priorities and dates for meeting these objectives. The final section of the state wide computer plan was to establish specific actions that the whole system could benefit from while making improvements. Eight action items were included in the plan. Each was of such nature that it provided some help to every community college district. Four of these action items involved state wide training and retraining: increasing top level management sensitivity to the potential of the computer, data processing vocational instructor upgrading, faculty orientation to the use of the computer to support instruction, and general administration staff training on the effective uses of data processing. Other action items included setting up working groups, making application inventories, running pilot projects on various equipment configuration to establish a state wide equipment procurement action, and increasing coordination and inter-campus communication support at the state level.

THE GOALS OF THE COMMUNITY COLLEGE SYSTEM INCLUDE HUMANIZING COMMUNITY COLLEGE EDUCATION THROUGH THE USE OF COMPUTERS

SATISFY EDUCATIONAL GOALS OF ALL EDP CAREER DEVELOPMENT STUDENTS

DEVELOP AND EMPLOY COMPUTER SUPPORTED INSTRUCTION WHENEVER TEACHING AND LEARNING WOULD BENEFIT

ASSIST DISTRICT AND STATE MANAGEMENT OF THE COMMUNITY COLLEGE SYSTEM IN MAKING BETTER DECISIONS ON THE USE OF HUMAN AND CAPITAL RESOURCES

PROCESS THE VOLUME OF STRUCTURED INFORMATION ESSENTIAL TO THE SYSTEM AS EFFECTIVELY AND EFFICIENTLY AS POSSIBLE

Illustration 2

This overall systems approach is working to the extent that the planning process takes succeedingly less time per cycle as formats are utilized and long range planning provides a continuance to move along. Duplication of effort is rapidly diminishing. Several computer projects that had been started before the planning process was fully under way were duplicating other efforts. Changes were made to create complementary activities instead of duplication. Establishing state wide priorities and policies has reduced the number of frustrating proposals for products that are not felt necessary or for computing approaches inconsistent with the state plan.

The list of benefits to date from this approach is sufficiently long to support the value of the effort. The real value of this approach increases over time as the products start to reach throughout the state to benefit the students of Washington.

SUMMARY

To be effective in a complex educational environment, efforts to humanize education through the use of computers must be planned and coordinated. The planning and coordinating efforts require time, top management involvement, and the serious attention of many faculty and staff members throughout the institution. In compensation for this expense, the benefits include a clear sense of direction, a rational distribution of non-duplicating assignments, consensus on decisions that have a wide impact, and a sense of consistency from system-wide parameters and priorities. The initial factors in a successful experience include sufficiently wide involvement by all segments of the institution interested in computing, setting priorities to insure the satisfaction of the most important needs, limiting of expectation to take into account the technological levels of the users, and--in our experience at least--keeping as much of the project development on the campus level as possible.